

REMARK/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-5 are presently active, Claims 6-9 are currently withdrawn from consideration, and Claims 1, 2, and 5 have been presently amended. No new matter has been added.¹

In the outstanding Office Action, Claims 2 and 3 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiang et al (U.S. Patent No. 2002/0073924 A1) in view of Motoda et al (U.S. Patent No. 5,496,408).

Regarding the 35 U.S.C. § 112, second paragraph, rejection: Claim 1 defines that the process gas is a mixture of a source gas and an inert gas. Accordingly, if an amount of flow of the inert gas is increased, an amount of the process gas, which contains the inert gas, is increased. Moreover, if an amount of flow of the inert gas is decreased, an amount of the process gas is decreased. Thus, it is clear that an amount of flow of the process gas can be controlled by controlling an amount of the inert gas contained in the process gas. In view of this understanding and the present clarifications to Claim 1, the 35 U.S.C. § 112, second paragraph, rejection should be removed.

Regarding the art rejection: Claim 1 as clarified defines pressure detecting means for detecting a pressure in the process chamber and also defines control means for controlling

¹ See specification, Figure 1 for its showing of susceptor 4 serving as an illustrative and non-limiting example of a placement stage. See Figure 2 and the discussion thereof in the specification for its showing of maintaining a constant pressure in the process chamber 2 by the illustrative and non-limiting example of controlled variation of the inert gas flow (N₂) and process gas flow (TiCl₄ and NH₃). See also page 13 of the specification lines 11-20 for the effect of pressure control.

an amount of flow of the process gas based on a result to be used for controlling an amount flow of the process gas.

The Office Action acknowledges on page 3 that the Chiang et al reference fails to disclose “a control means that maintains a constant pressure by controlling an amount of flow of the process and the inert gas supplied to said process chamber based on a result of detection of the pressure detection means.” Thereafter, the Office Action applies the Motoda et al reference for an asserted teaching of this features. However, the Motoda et al reference describes the pressure gauge 21 as a pressure sensor that is provided to a gas mixture pipe 12, which is provided for mixing a source gas and a carrier gas (see column 6, line 22, and column 8, line 49).

In the Motoda et al reference, an amount of flow of the carrier gas is controlled so as to maintain a pressure inside the gas mixture pipe. This control is not directed to maintaining a pressure in the process chamber, as the intervening mass flow controllers 14a, 14b, and 14c separate the gas mixture pipe 12 from reaction tube 3. The Motoda et al reference does not disclose a pressure sensor for detecting a pressure inside the process chamber. Thus, the Motoda et al reference does not disclose controlling an amount of flow of the process gas based on a result of detection of the pressure in the process chamber, as defined in Claim 1.

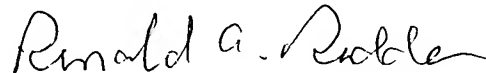
These deficiencies in the Motoda et al reference are not overcome by the Chiang et al reference. Moreover, the additional features defined in Claim 1 of the control means controlling the heater to heat the placement stage and also controlling the amount of flow of the process gas so as to maintain pressure inside the process chamber to be constant, thereby maintaining a temperature of the substrate to be constant are features also not met by the applied art. Accordingly, a combination of the Chiang et al reference and the Motoda et al reference would not produce all the elements of Claim 1.

Since M.P.E.P. § 2143.03 requires that all words in a claim must be considered in judging the patentability of the claim against the prior art, Applicants submit that (with the deficiencies in the Chiang et al reference and the Motoda et al reference noted above) Claim 1 and dependent Claims 2-5 patentably define over the applied art and should be allowed.

Conclusion: In view of the present amendment and in light of the above discussions, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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